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e-CABIN: Taking Passenger Satisfaction To A Higher Level

Ten minutes into the flight and the CEO has already used a new onboard system to predict his arrival time, zoom-in on satellite photos of his new plant site and gather corresponding demographics. He answers his e-mail, sends a fax to his law firm, and makes restaurant reservations over the web. After that, he edits the presentation sent to him via the onboard local network by the two engineers working in the back row. Finished, he uses the LAN again to send the presentation to his executive assistant who is sitting across the aisle.

He has done all of this while listening to his favorite jazz CD and catching the live evening market wrap on a television financial network. Now he places his finger on the touch screen, selects a movie, dims the lights, turns down the heat, and alerts the cabin steward of his beverage preference. Meanwhile, the flight crew uses the same system to make an automated cabin announcement and activate the digital datalink to send the fuel and catering order to the FBO at the next stop. All of the previously described activity passed through a single, compact, on-board computer server. This is not the stuff of futurism or fiction.

DeCrane Aircraft has developed a unique aircraft cabin management, information, and entertainment system that provides an integrated platform for existing and emerging technologies. "e-CABIN" was developed by Audio International, a member of DeCrane Aircraft's Cabin Management Group of companies. e-CABIN is the only aircraft system that provides an onboard Local Area Network server that combines cabin control with stored, cached, and live on-demand entertainment, e-mail and internet capabilities.

"e-CABIN takes flying to a higher level," says Chuck Becker, president of DeCrane Aircraft's Cabin Management Group. "It puts the passenger in control and provides a 'large jet experience' on almost any size turbofan aircraft."

The heart of e-CABIN is a lightweight, compact and efficient e-Server. Weighing a maximum of only 18 pounds, the e-Server measures just 9.25" wide by 4.75" high, by 11.6" long. It draws only 80 watts of power and inputs from either 28 volt DC or 115 volt AC systems and does not require supplemental cooling. Hard drive capacity is up to 146 gigabytes and standard memory is 256 megabytes expandable to one gigabyte. The digital e-Server equipped with high-speed disk drives can eliminate the need for traditional media devices such as VCRs and audio tape players and the need to store (and occasionally search for) tapes and CDs for them. By replacing traditional "multi-box" systems, the e-Server provides a tangible space and weight savings. Content can be periodically updated by fast-loading data onto the e-Server from portable carry-on loading devices.

Existing onboard analog devices such as cameras, DVD players, and direct broadcast satellite television receivers can have their content converted to real-time MPEG format for distribution throughout the aircraft with the addition of an optional Audio/Video Encoder card to the e-Server. The cabin LAN is compatible with integrated in-seat devices (e.g. ECUs and touch screens) as well as standard, carry-on personal computer devices such as laptops.

There are three networked subsystem options available with e-CABIN: Cabin.net, Video.net, and Map.net, which integrate with cabin management subsystems and provide e-CABIN with large capacity, scalability, and expandability.

Using the e-Server to provide high-speed connectivity, Cabin.net provides the platform for network services, e-mail, and Internet feeds. Combined with third-party airborne ISP (Internet Service Provider) software applications, the Cabin.net package enables passengers to send faxes and e-mails and browse up to 400,000 pages of cached Internet content that is periodically refreshed via the aircraft's telephone system. Cabin.net also provides the platform for LAN features which enable passengers to collaborate with each other while aboard the aircraft, bringing unmatched productivity to every seat. Cabin.net makes the promise of an "office in the sky" reality.

Video.net is the distribution and control system for audio-and-video-on-demand (AVOD). The system uses simple VCR-type transport controls (fast-forward, rewind, pause, stop and play). Video.net is scalable and allows up to 25 passengers each to receive individual MPEG-1 or MPEG-2 video streams, .MPA and .MP3 audio formats, enjoy web-based PC single or multi-player games, and choose from dozens of movies and hundreds of audio programs stored on the e-Server.

Both Cabin.net and Video.net will support live, real-time content such as live direct broadcast satellite television programming using its 10/100 megabits per second Ethernet connection to a DBS transceiver and antenna. High-speed Internet access also will be available via broadband channels such as Ku band (10 mbps) and Inmarsat L Band (64 kbps) satellites when they become available in the future. It also will support significantly faster connectivity when a new generation of Inmarsat and other satellites become available.

Map.net allows passengers to tap into the aircraft's navigation system to track and analyze the flight (altitude, airspeed, course bearing, estimated time of arrival) in real time on an interactive moving map and to call up a variety of cartographic and high-resolution satellite photo imagery. Images can be overlaid with demographic and other data from more than 260 countries. An optional city package lets passengers zoom in on individual buildings and ground features.

Through cabin touch screens and monitors, or carry-on laptops that plug into the system, passengers are also able to access the cabin management system to control lighting and cabin environment.

For the flight crew, e-CABIN's optional cockpit-mounted Interface Module also lessens workload, by providing up to eight prerecorded passenger announcements.

For crew and passengers alike, e-CABIN provides the ultimate one-touch onboard entertainment and communication solution. By virtue of its LAN, it supports the world's most advanced, integrated network for corporate aircraft.

e-CABIN has set the standard for advanced, fully-integrated, onboard entertainment and communications networks. It is now successfully operating on corporate and head-of-state aircraft worldwide and is one more component of DeCrane's Total Cabin Capability.

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